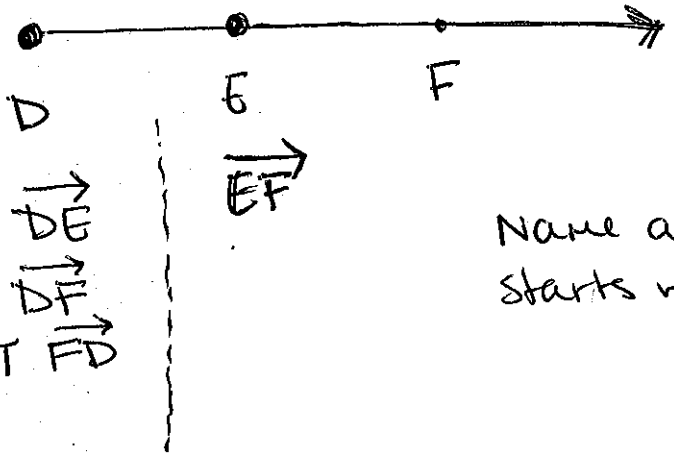
Section 1-6: Angles

Notes FH
2/3

☆ Ray: Exactly one endpoint and extends infinitely in one direction

$\overrightarrow{AB}$

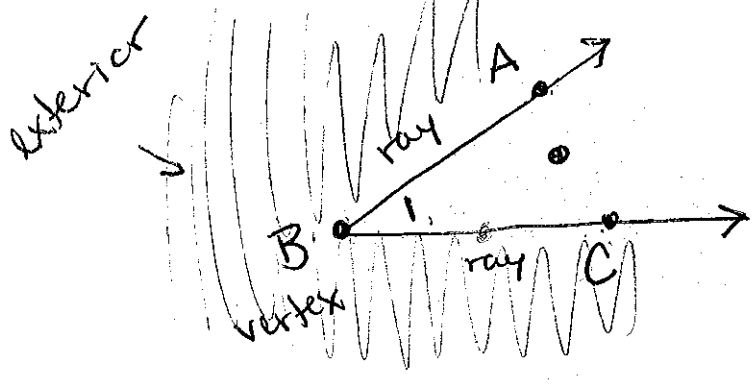


Name always starts with the endpoint

☒ Angles

Angle is formed by 2 noncollinear rays

- the 2 rays are the sides of the angle
- the common endpoint is the vertex



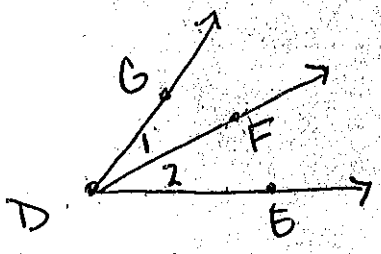
interior of the angle

Names:

$\angle 1$
$\angle ABC$
$\angle CBA$
$\angle B$

vertex must be the middle letter

Angles are measured in degrees with a protractor. θ "theta"



$\angle 1$ is $\angle GDF$ or $\angle FDG$

$\angle 2$ is $\angle FDE$ or $\angle EDF$

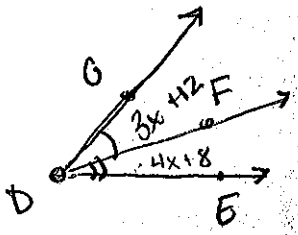
Cannot call it $\angle D$

$\angle GDE = \angle 1 + \angle 2$

Angle Addition Postulate

If F is interior to $\angle GDE$, then

$m\angle GDF + m\angle FDE = m\angle GDE$



Ex 1: $m\angle GDF = 3x+12$

$m\angle GDE = 10x+5$

$m\angle FDE = 4x+8$

Find x and $m\angle GDE$

$3x+12+4x+8 = 10x+5$

$7x+20 = 10x+5$

$-7x \quad -7x$

$20 = 3x+5$

$-5 \quad -5$

$\frac{15}{3} = \frac{3x}{3}$

$x = 5$

$m\angle GDE = 10x+5$

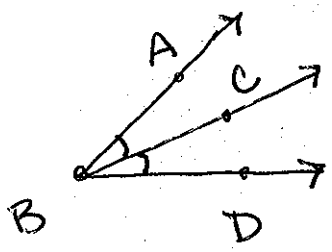
$10(5)+5$

$m\angle GDE = 55^\circ$

Classifying Angles

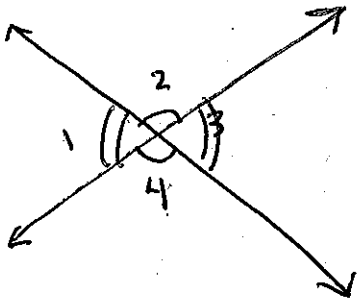
- Acute angle - smaller than 90°
- Right angle - exactly 90°
- Obtuse - bigger than 90°, smaller than 180°
- Straight angle - 180° exactly, line
- Congruent - angles are congruent $\cong$ if they are the same measure

Angle Bisector



$\overrightarrow{BC}$ is an angle bisector of $\angle ABD$ if $m\angle ABC = m\angle CBD$

Vertical Angles are always congruent



$\angle 1 \cong \angle 3$
$\angle 2 \cong \angle 4$

HW: p. 50 #17-28, 34, 36